



# RADIO FREQUENCY RELAYS

Bulletin 158  
**RELAYS**  
Series RFBC

## DESCRIPTION

The Hi-G Co., Inc. series of coaxially terminated hermetically sealed relays have been designed to provide reliable switching functions in the most demanding RF applications. The use of military grade relays in the basic construction has been coupled with a unique and improved termination network to insure faultless performance under severe environmental conditions. The design concepts employed in each of these series have been time tested through thousands of hours testing and millions of field operations to provide the highest degree of reliability.

## FEATURES

- All welded relay construction.
- Welded coax interconnections.
- 200 watt RF carry capability.
- 75 watt RF switching capability.
- Low level to 2 amp auxiliary switching.
- 1 or 2 form C RF contacts.
- Terminated with 6" RG 196/u teflon cable.

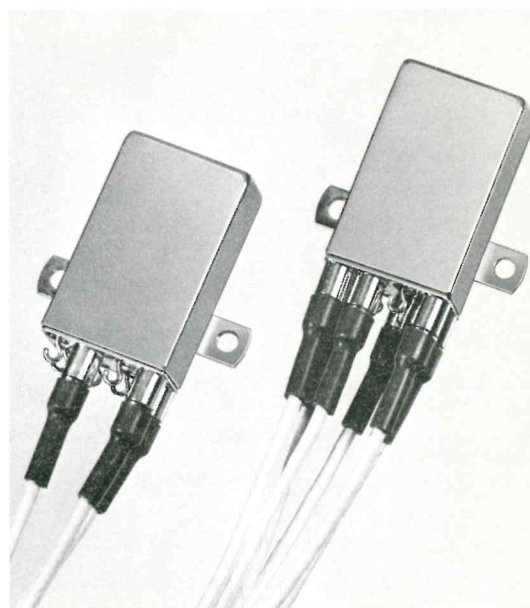
## SPECIFICATIONS

### ELECTRICAL

<b>Coil Data:</b>	Standard coil resistance available to 10,000 ohms. Design tolerance + 10%.
<b>Sensitivity:</b>	Standard DC sensitivity at pick-up at + 25° C 40 milliwatts.
<b>Contact Rating:</b>	DC (aux): Low level through 2 amperes 28 VDC RF: 75 watts switching 200 watts carry (cold switching)
<b>Contact Resistance:</b>	50 milliohms max. initial 100 milliohms max. after life
<b>Operational Life:</b>	100,000 operations min. at max. rated temperature at max. rated loads.
<b>Operate Time:</b>	13.0 milliseconds max. at +25° C
<b>Release Time:</b>	3.0 milliseconds max. at +25° C
<b>Bounce Time:</b>	2.0 milliseconds max. at +25° C

### ENVIRONMENTAL

<b>Temperature:</b>	- 65° C to + 125° C
<b>Vibration:</b>	20 G's 10 to 2,000 Hz
<b>Shock:</b>	100 G's 11 milliseconds
<b>Sealing:</b>	Hermetic to 1.3 inches Mercury
<b>Insulation Resistance:</b>	1000 megohms min. at 500VDC.
<b>Dielectric Strength:</b>	1000 VRMS at 60 Hz



## RADIO FREQUENCY CHARACTERISTICS

<b>Frequency Range:</b>	0 - 500 MHz*
<b>Voltage Standing Wave Ratio (VSWR)</b>	< 1.1:1 typical
<b>Insertion Loss:</b>	0.16 db typical
<b>Characteristic Impedance:</b>	50 ohms standard †
<b>Cross Talk:</b>	- 50 db typical
<b>Power Handling:</b>	200 watts maximum
<b>Power Switching:</b>	75 watts maximum

\* Derated characteristics to 1000 MHz

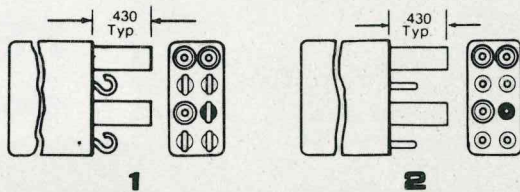
† Other impedances available on special order



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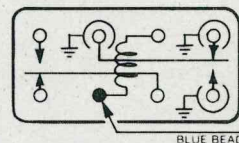


## HEADER STYLES

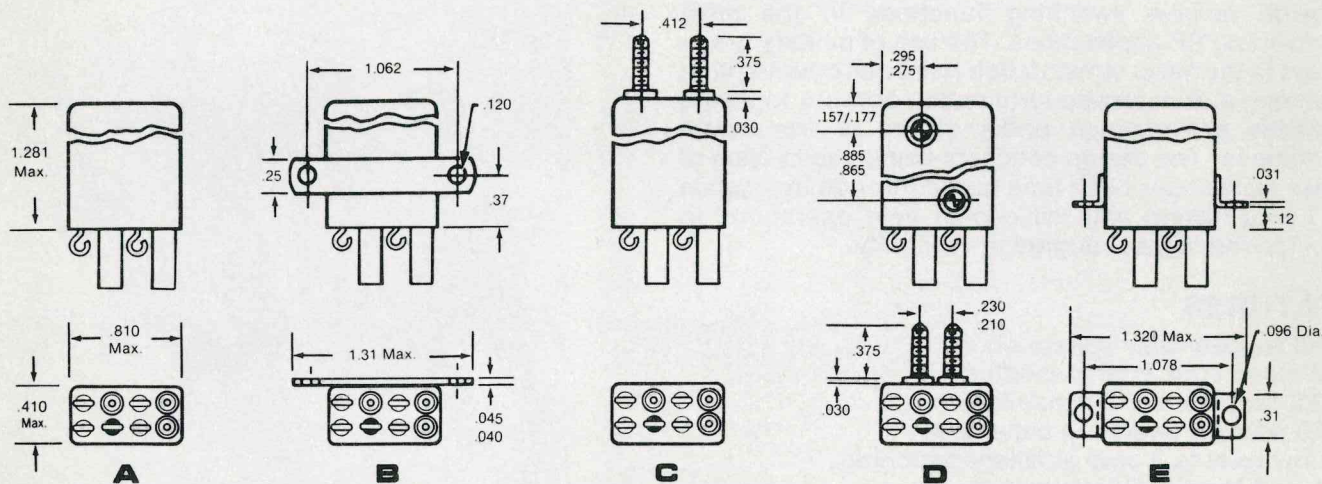


**NOTE:** Terminal spacing 0.2 inch, all headers.  
Aux. terminal diameter: 0.030 inch, all headers. RF terminal diameter: .160 inch max.

## ELECTRICAL DIAGRAM

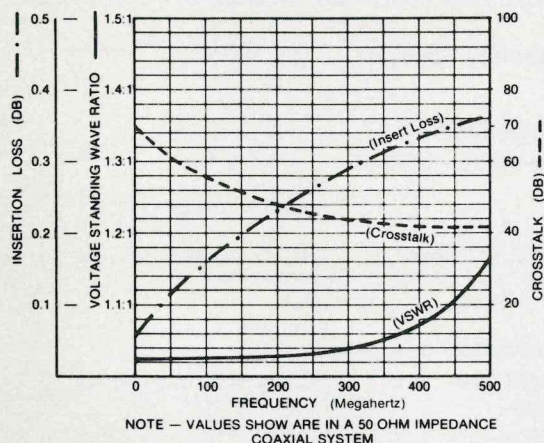


## ENCLOSURE STYLES



**NOTE:** Studs shown are 4-40 NC 2-A

## TYPICAL CHARACTERISTICS



Voltage Code	Coil Res. at 25° C	Nominal Coil Voltage (VDC)	Nominal Coil Current (Ma)	Max. P.U. Current (Ma)	Min. D.O. Current (Ma)
101	20	1.8	89.2	44.6	4.5
102	30	2.2	73.0	36.5	3.7
103	50	2.8	56.6	28.3	2.8
104	75	3.5	46.2	23.1	2.3
105	100	4.0	40.0	20.0	2.0
106	200	5.7	28.4	14.2	1.4
107	300	7.0	23.0	11.5	1.2
109	500	9.0	17.8	8.9	.9
112	875	12.0	13.5	6.8	.7
113	1000	12.6	12.6	6.5	.6
118	2000	18.0	8.9	4.5	.5
120	2500	20.0	8.0	4.0	.4
128	5000	28.0	5.6	2.8	.3
135	8000	36.0	4.5	2.3	.2
140	10000	40.0	4.0	2.0	.2

## ORDERING INFORMATION

**EXAMPLE: RFBC-2A-128**

**RFBC**  
Type

**2**  
Header  
Style

**A**  
Enclosure  
Style

**128**  
Voltage  
Code

**NOTE:** For 2 RF poles, use prefix 2RFBC.

Consult factory for other cable types and lengths.



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5/75-5M Printed in U.S.A.





# 75 WATT FULL SIZE RADIO FREQUENCY RELAY

Bulletin 157  
**RELAYS**  
Series RFB

## DESCRIPTION

The Hi-G Co., Inc. series of coaxially terminated hermetically sealed relays have been designed to provide reliable switching functions in the most demanding RF applications. The use of military grade relays in the basic construction has been coupled with a unique and improved termination network to insure faultless performance under severe environmental conditions. The design concepts employed in each of these series have been time tested through thousands of hours testing and millions of field operations to provide the highest degree of reliability.

## FEATURES

- All welded relay construction
- Welded coax interconnections
- 200 watt RF carry capability
- 75 watt RF switching capability
- Low level to 2 amp auxiliary switching
- 1 or 2 form C RF contacts
- Terminated with 6" RG 196/u Teflon® cable

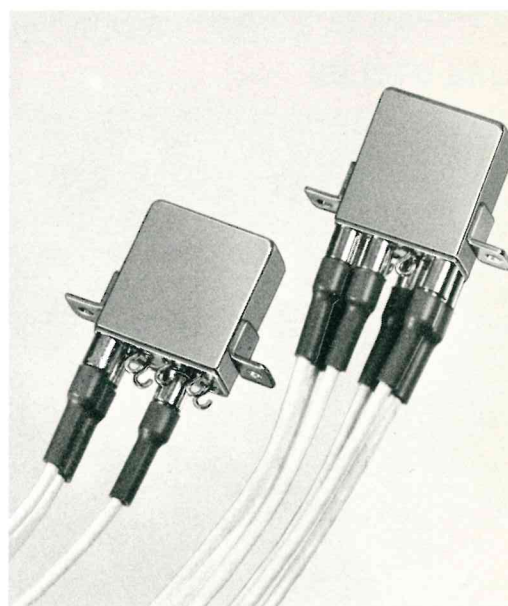
## SPECIFICATIONS

### ELECTRICAL

<b>Coil Data:</b>	Standard coil resistance available to 5,000 ohms Design tolerance $\pm 10\%$
<b>Sensitivity:</b>	Standard DC sensitivity at pick-up at $+25^{\circ}\text{C}$ 250 milliwatts
<b>Contact Rating:</b>	DC (aux): Low level through 2 amperes 28 Vdc RF: 75 watts switching 200 watts carry (cold switching)
<b>Contact Resistance:</b>	50 milliohms max. initial 100 milliohms max. after life
<b>Operational Life:</b>	100,000 operations min. at max. rated temperature at max. rated loads
<b>Operate Time:</b>	6.0 milliseconds max. at $+25^{\circ}\text{C}$
<b>Release Time:</b>	3.0 milliseconds max. at $+25^{\circ}\text{C}$
<b>Bounce Time:</b>	2.0 milliseconds max. at $+25^{\circ}\text{C}$

### ENVIRONMENTAL

<b>Temperature:</b>	$-65^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
<b>Vibration:</b>	20 G's 10 to 2,000 Hz
<b>Shock:</b>	100 G's 6 milliseconds
<b>Sealing:</b>	Hermetic to 1.3 inches Mercury
<b>Insulation Resistance:</b>	1000 megohms min. at 500 Vdc
<b>Dielectric Strength:</b>	1000 Vrms at 60 Hz



## RADIO FREQUENCY CHARACTERISTICS

<b>Frequency Range:</b>	0 - 500 MHz*
<b>Voltage Standing Wave Ratio (VSWR):</b>	$<1.1:1$ typical
<b>Insertion Loss:</b>	0.16 dB typical
<b>Characteristic Impedance:</b>	50 ohms standard †
<b>Crosstalk:</b>	-50 dB typical
<b>Power Handling:</b>	200 watts maximum
<b>Power Switching:</b>	75 watts maximum

\* Derated characteristics to 1000 MHz

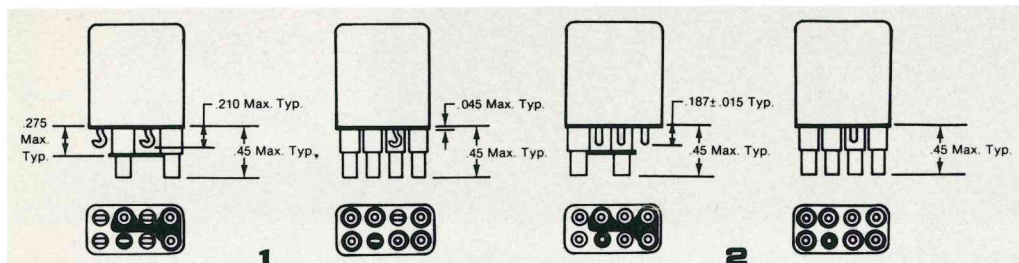
† Other impedances available on special order



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## HEADER STYLES

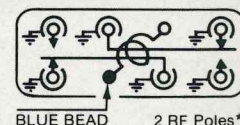
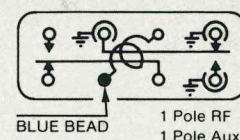


**NOTE:** Terminal spacing 0.2 inch, all headers.

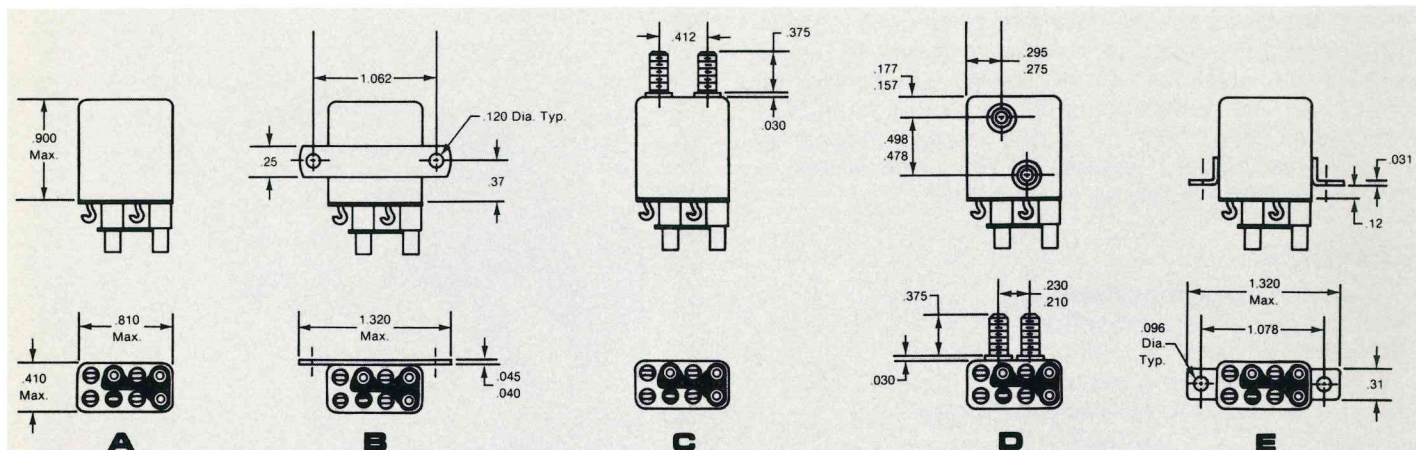
Aux. terminal diameter: 0.030 inch, all headers. RF terminal diameter: .160 inch max.

1 pole RF versions carry support bracket as shown.

## ELECTRICAL DIAGRAM

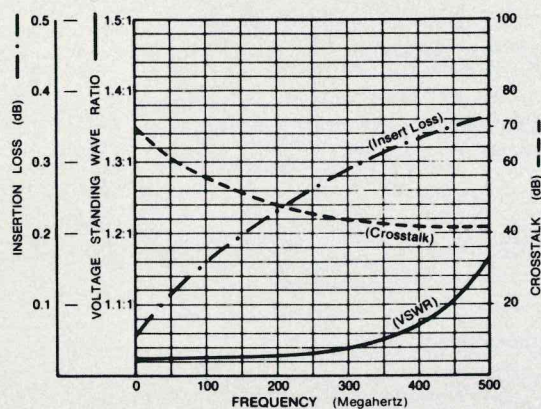


## ENCLOSURE STYLES



**NOTE:** Studs shown are 4-40 NC 2-A.

## TYPICAL CHARACTERISTICS



**NOTE:** Values shown are in a 50 ohm impedance coaxial system.

RFB (DC Coil)					
Voltage Code	Nominal Coil Voltage	Max. Continuous Coil Voltage	Max. Pick-up Voltage @ 25° C	Min. Drop-out Voltage @ 25° C	Effective DC Coil Resistance @ 25° C
106	6	7.2	3.1	0.5	40
112	12	14.4	6.3	0.7	160
126	26.5	32.0	13.0	1.5	675
148	48	58.0	25.0	2.5	2500
176	76	90.0	35.0	3.0	5000
RFBR (AC Coil) **					
126	26.5	32	15	2.0	600
148	48	58	28	3.0	2000
176	76	90	44	4.0	3500
215	115	125	66	5.0	10000

## ORDERING INFORMATION

**EXAMPLE: RFB-2A-126**

**RFB**  
Type

**2**  
Header  
Style

**A**  
Enclosure  
Style

**126**  
Voltage  
Code

\*For 2 RF poles, use prefix 2RFB.

\*\*For AC Coil use RFBR.

Consult factory for other cable types and lengths.



**Hi-G CO., INC.**

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**HI-G D'ITALIA s. p. a.**

CORSO DELLA REPUBBLICA, 340  
CISTERNA DI LATINA, ITALY  
TEL. 9699666 / 7 - CABLE: HIGITAL  
TELEX: 62412 HIG

1/77-5M Printed in U.S.A.





# 75 WATT SINGLE POLE RADIO FREQUENCY RELAY

Bulletin 159  
**RELAYS**  
Series RFC

## DESCRIPTION

The Hi-G Co., Inc. series of coaxially terminated hermetically sealed relays have been designed to provide reliable switching functions in the most demanding RF applications. The use of military grade relays in the basic construction has been coupled with a unique and improved termination network to insure faultless performance under severe environmental conditions. The design concepts employed in each of these series have been time tested through thousands of hours testing and millions of field operations to provide the highest degree of reliability.

## FEATURES

- All welded relay construction
- Welded coax interconnections
- 200 watt RF carry capability
- 75 watt RF switching capability
- 1 form C RF contacts
- Terminated with 6" RG 196/u Teflon® cable

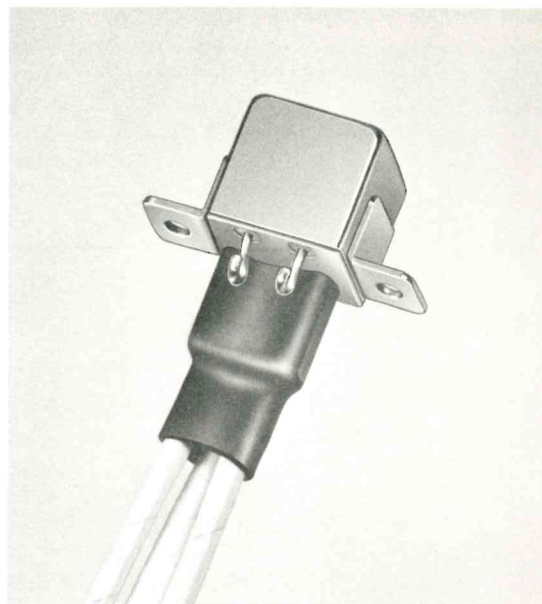
## SPECIFICATIONS

### ELECTRICAL

<b>Coil Data:</b>	Standard coil resistance available to 1,500 ohms Design tolerance $\pm 10\%$
<b>Sensitivity:</b>	Standard DC sensitivity at pick-up at + 25° C 150 milliwatts
<b>Contact Rating:</b>	75 watts switching 200 watts carry (cold switching)
<b>Operational Life:</b>	100,000 operations min. at max. rated temperature at max. rated loads
<b>Operate Time:</b>	6.0 milliseconds max. at +25° C
<b>Release Time:</b>	3.0 milliseconds max. at +25° C

### ENVIRONMENTAL

<b>Temperature:</b>	- 65° C to + 125° C
<b>Vibration:</b>	20 G's 10 to 2,000 Hz
<b>Shock:</b>	100 G's 6 milliseconds
<b>Sealing:</b>	Hermetic to 1.3 inches Mercury
<b>Insulation Resistance:</b>	1000 megohms min. at 500 Vdc
<b>Dielectric Strength:</b>	1000 Vrms, 60 Hz, to case



### RADIO FREQUENCY CHARACTERISTICS

<b>Frequency Range:</b>	0 - 500 MHz*
<b>Voltage Standing Wave Ratio (VSWR):</b>	<1.1:1 typical
<b>Insertion Loss:</b>	0.16 dB typical
<b>Characteristic Impedance:</b>	50 ohms standard †
<b>Crosstalk:</b>	-50 dB typical
<b>Power Handling:</b>	200 watts maximum
<b>Power Switching:</b>	75 watts maximum

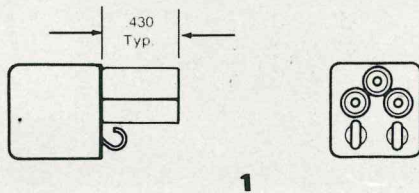
\* Derated characteristics to 1000 MHz

† Other impedances available on special order



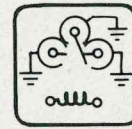
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## HEADER STYLES

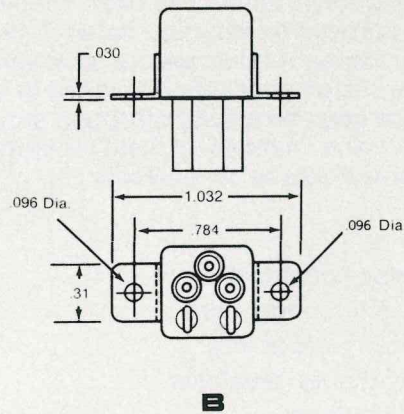
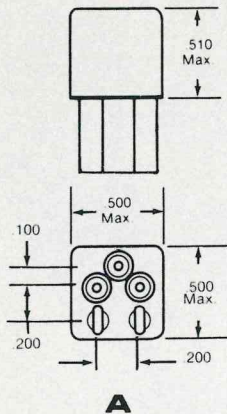


**NOTE:** Terminal diameter 0.030 inch, all headers.

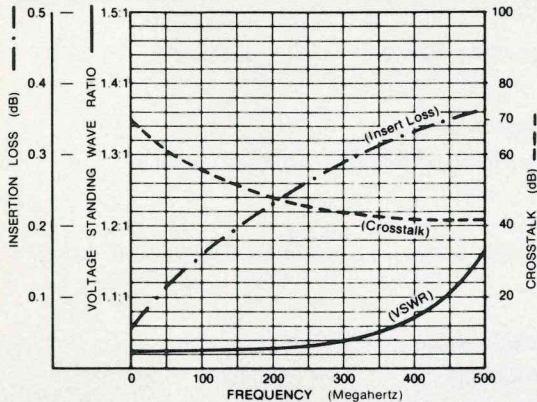
## ELECTRICAL DIAGRAM



## ENCLOSURE STYLES



## TYPICAL CHARACTERISTICS



Voltage Code	Nominal Coil Voltage	Max. Continuous Coil Voltage	Max. Pick-up Voltage @ + 25° C	Min. Drop-out Voltage @ + 25° C	Effective DC Coil Resistance @ + 25° C ohms
106	6	7.2	3.5	0.5	80
112	12	14.4	7.0	1.0	325
126	26.5	32.0	15.0	2.0	1500

**NOTE:** Values shown are in a 50 ohm impedance coaxial system.

## ORDERING INFORMATION

**EXAMPLE: RFC-1A-126**

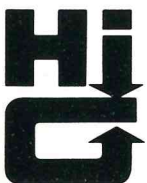
**RFC**  
Type

**1**  
Header  
Style

**A**  
Enclosure  
Style

**126**  
Voltage  
Code

**NOTE:** Consult factory for other cable types and lengths.



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